



**Billing Code: 4910-60-W**

**DEPARTMENT OF TRANSPORTATION**

**Pipeline and Hazardous Materials Safety Administration**

**[Docket No. PHMSA-2012-0044]**

**Pipeline Safety:** Notice to Operators of Driscopipe® 8000 High Density Polyethylene Pipe of the Potential for Material Degradation.

**AGENCY:** Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

**ACTION:** Notice; Issuance of Advisory Bulletin.

**SUMMARY:** PHMSA is issuing this advisory bulletin to alert operators using Driscopipe® 8000 High Density Polyethylene Pipe (Drisco8000) of the potential for material degradation. Degradation has been identified on pipe between one-half inch to two inches in diameter that was installed between 1978 and 1999 in desert-like environments in the southwestern United States. However, since root causes of the degradation have not been determined, PHMSA cannot say with certainty that this issue is isolated to these regions, operating environments, pipe sizes, or pipe installation dates. While the manufacturer has attempted to communicate with known or suspected users, PHMSA and the National Association of Pipeline Safety Representatives (NAPSR) have identified several operators currently using Drisco8000 pipe who had not received communications about the issue. PHMSA is issuing this advisory bulletin to all operators

of Drisco8000 pipe in an effort to ensure they are aware of the issue, communicating with the manufacturer and their respective regulatory authorities to determine if their systems are susceptible to similar degradation, and taking measures to address it.

**ADDRESSES:** This document can be viewed on the PHMSA home page at:

<http://www.phmsa.dot.gov> .

**FOR FURTHER INFORMATION CONTACT:** Max Kieba by phone at 202-493-0595 or by email at [max.kieba@dot.gov](mailto:max.kieba@dot.gov). Pipeline operators with potentially affected pipe or anyone with questions specific to actions in a certain state or region are encouraged to communicate with the appropriate pipeline safety authority directly. Operators of pipelines subject to regulation by PHMSA should contact the appropriate PHMSA Regional Office. A list of the PHMSA Regional Offices and their contact information is available at: <http://www.phmsa.dot.gov/pipeline/about/org>.

Pipeline operators subject to regulation by a state should contact the appropriate state pipeline safety authority. A list of state pipeline safety authorities and their contact is provided at: [http://www.napsr.org/managers/napsr\\_state\\_program\\_managers2.htm](http://www.napsr.org/managers/napsr_state_program_managers2.htm).

## **SUPPLEMENTARY INFORMATION:**

### **I. Background**

Two operators of natural gas pipeline systems have identified locations of material degradation on Drisco8000 pipe in Arizona and Nevada. The manufacturer of the pipe,

Performance Pipe, a division of Chevron Phillips Chemical Company LP, confirmed that the pipe was degraded.

In 1999, a one-inch Copper Tube Size (CTS) Drisco8000 pipe service line in Arizona experienced a gas leak and was found to be degraded. The operator of this pipeline found areas of delaminating and surface cracking on Drisco8000 pipe ranging from one-half inch CTS to two inches Iron Pipe Size pipe at various locations in Arizona beginning in 2004. To better track the instances of the phenomenon, the operator implemented a procedure for reporting, defining the degradation area, and conducting leak surveys on the affected pipe. Chemical contamination was considered a potential source for degradation, but after extensive testing by the manufacturer and various outside laboratories, no indications of chemical source could be verified as a root cause.

In 2007, the operator experienced a gas ignition incident on a one-inch CTS Drisco8000 service line in Arizona. Due to the slit crack nature of the pipe failure, the investigation of this incident included checking for the possibility of nylon contamination in the pipe material. Nylon contamination was ruled out, but degradation of the internal pipe wall was noted. An additional incident occurred elsewhere in Arizona in 2007. As a result of these incidents, the operator implemented a replacement program and follow-up leak survey program. The operator continues its investigation and is working cooperatively with the manufacturer and regulators to determine the root causes and necessary mitigative actions.

A second operator found two cases of degraded Drisco8000 pipe in Arizona in 2006 and reported them to the Arizona Corporation Commission Office of Pipeline Safety. This

operator is now looking at other areas of their service territory for potential degraded pipe issues.

The affected pipes in the cases reported thus far have diameters from one-half inch to two inches and have installation dates that range from 1978 to 1999. All reported cases have been on systems operating at or below 60 psig in desert regions in the southwestern United States. In those cases where print line codes are present on the pipe, the codes identify the pipe as being manufactured at a Watsonville, California, pipe plant which closed in 2000. The manufacturer has indicated they do not have any evidence that the condition developed as a result of the manufacturing process.

According to the manufacturer, the degraded pipe is fairly easy to identify when the pipe is exposed. Affected pipe displays delaminating or peeling of the outer diameter or a friable or crumbling appearance on the inner diameter surfaces of the pipe. In addition, an audible cracking sound or noise may be detected when flexing, cutting, or squeezing the pipe.

Once installed and in service, degraded pipe is not easy to identify. The manufacturer is not aware of a current testing protocol that consistently identifies the affected material while it is in service. Existing leak survey technologies have proven to be the most effective tool in locating and identifying degraded pipe.

The areas of degradation are not always consistent in their characteristics. The degradation may not occur along the complete pipe length, but rather may start and stop within a relatively short section of pipe and then reoccur in another area further down the

segment. In addition, the operator and manufacturer have observed instances of degradation on only one side of the pipe with the other side having no indication of degradation.

The root cause of the degradation has not been determined. All reported cases have occurred in the southwestern United States where average ambient temperatures are very high, but this may or may not be a contributing factor. The manufacturer does not have evidence that the degraded pipe condition developed from or as a result of the manufacturing process. The manufacturer does not believe the issue to be associated with a particular resin lot. While a review of records has identified some changes in the resin formulation during the time period, the manufacturer does not believe that these changes contributed to the issue. The reporting operators have not identified any other construction or installation practices or conditions that are common to the known occurrences of degraded pipe.

PHMSA has asked the manufacturer to describe the problem and its extent and has requested information related to manufacturing, construction practices, and testing recommendations. Those questions and responses, along with pictures of degraded pipe, are available on the docket associated with this advisory.

The manufacturer is communicating with known customers, regulators, and industry groups as new information becomes available and the operators with known cases of degraded pipe continue to communicate with the appropriate regulatory authorities.

## **II. Advisory Bulletin (ADB-2012-03)**

**To:** Operators using Driscopipe® 8000 High Density Polyethylene Pipe

**Subject:** Potential for Material Degradation of Driscopipe® 8000

**Advisory:** PHMSA advises all operators using Driscopipe® 8000 of the potential for material degradation. PHMSA encourages operators to communicate and work with the manufacturer and their respective regulatory authorities to consider and implement any actions that are needed to address the issue as it relates to their systems.

Operators using Drisco8000 pipe who have not already received communications from the manufacturer are encouraged to contact the manufacturer so they can receive future updates and determine whether their systems are susceptible to degradation. For additional information, contact Karen S. Lively, P.E, Technical Manager, Performance Pipe, a division of Chevron Phillips Chemical Company LP, by phone at 972-599-7413 or email at [livelks@cpchem.com](mailto:livelks@cpchem.com). Operators using Drisco8000 pipe are encouraged to inform the relevant regulatory authority and work together to determine what, if any, actions are needed to monitor and address the issue within their systems.

Due to the uncertainty of the root cause of the material degradation, PHMSA cannot provide specific guidance on how best to address the issue. However, PHMSA urges all operators using Drisco8000 pipe to consider the use of accelerated and more frequent leak surveys in those areas where degraded pipe is known or suspected to exist.

All operators using Drisco8000 pipe are encouraged to work with all stakeholders to determine how to address discovery and repair within their systems, taking the most conservative approach and keeping pipeline integrity and public safety a priority.

**Authority:** 49 U.S.C. Chapter 601 and 49 CFR 1.53.

Issued in Washington, DC on \_\_February 29, 2012\_\_\_\_\_.

Jeffrey D. Wiese,

Associate Administrator for Pipeline Safety.

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